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**Physical Science Elements and Chemical Bonds (Chapter 11 Outline)**

*Vocabulary*: Define in your own words

Chemical bond-

valence electron-

electron dot diagram-

covalent bond-

molecule-

polar molecule-

chemical formula-

ion-

ionic bond-

metallic bond-

**Briefly describe the following concepts:**

How is an electron's energy level related to its distance from the nucleus? Explain. (2 pts)

Why do atoms gain, lose, or share electrons? Discuss the different types chemical bonds that result from these interactions between electrons. (2 pts)

**DRAW** the electron dot diagrams for Potassium, Iodine, and Calcium. (3 pts)

How do elements differ from the compounds they form? Explain. (2 pts)

What are some common properties of a covalent compound? Describe at least three properties of covalent compounds in detail. (3 pts)

Why is water a polar compound? Explain how electrons are distributed in water molecule. (2 pts)

How do metallic bonds differ from ionic and covalent chemical bonds? Describe at least 2 characteristics of compounds that result from metallic bonds. (3 pts)

***ABOUT THE READING:***

Write three things that you learned about Chemical Bonds*:*

***Make sure to write a full sentence.***

*Example: I learned that an ion is a charged atom; it is either positively charged (called a cation) or it is negatively charged (called an anion).*

*1.*

*2.*

*3.*

**ASSIGNED WORK:**

*After reading the short article title "Green Science: Airships" on page 388, perform the research extension titled "Now it's your turn". Research how and why noble gases are used for historic document preservation. Think about it, the Declaration of Independence was written on paper many years ago, how is it still in decent shape today? Check out a link to an interesting article on* [*livescience.com*](http://livescience.com) *by Tanya Lewis (2013). Even though noble gases are extremely unreactive, they still have many uses.*

*LINK:* [*http://www.livescience.com/39494-incredible-tech-preserving-historical-documents.html*](http://www.livescience.com/39494-incredible-tech-preserving-historical-documents.html)